

What Is Claimed:

300  
AI

1 Klein 1. An electrical machine comprising:  
2 a stator core having slots;  
3 a set of windings disposed within said slots,  
4 said set of windings having  $2N+1$  phases where  $N$  is an  
5 integer greater than 1.

1 K 2. An electrical machine as recited in claim 1  
2 wherein said set of windings is coupled to a common node. *Shawl*

1 An 3. An electrical machine as recited in claim 1  
2 wherein said set of windings is coupled polygonally. *Δ*

1 K ✓ 4. An electrical machine as recited in claim 1  
2 further comprising a switching circuit coupled to said set  
3 of windings, said switching circuit comprising at least  
4  $2(2N+1)$  switching elements. *?)*

1 K ✓ 5. An electrical machine as recited in claim 4  
2 further comprising a full wave rectifier.

1 A ✓ 6. An electrical machine as recited in claim 1  
2 wherein  $N=2$ . */*

1 K ✓ 7. An electrical machine as recited in claim 1  
2 wherein  $N=3$ . *η*

1 K ✓ 8. An electrical machine as recited in claim 1  
2 wherein said electrical machine comprises a generator.

1 K ✓ 9. An electrical machine as recited in claim 1  
2 wherein said set of windings has a full pitch.

1       K     10. An electrical machine as recited in claim 1  
2 wherein said set of windings has a fractional pitch.

1       K     11. An alternator for an automotive vehicle  
2 comprising:  
3       a housing;  
4       a rotor rotatably disposed within said housing;  
5       a stator core disposed within said housing  
6 adjacent to said rotor, said stator core having slots; and  
7       a set of windings disposed within said slots,  
8 said set of windings having  $2N+1$  phases where  $N$  is an  
9 integer greater than 1.

1             12. An alternator as recited in claim 11  
2 further comprising a full wave rectifier.

1             13. An alternator as recited in claim 11  
2 wherein said set of windings is coupled to a common node.

1       A     14. An alternator as recited in claim 11  
2 wherein said set of windings is coupled schematically in a  
3 polygon.

1             15. An alternator as recited in claim 14  
2 wherein said polygon has  $2N+1$  sides.

1             16. An alternator as recited in claim 11  
2 further comprising a rectifier circuit coupled to said  
3 first set of windings, said rectifier circuit comprising  
4 at least  $2(2N+1)$  rectifying elements.

1       A     17. An alternator as recited in claim 11  
2 wherein  $N=2$ .

1 ✓ 18. An alternator as recited in claim 11  
2 wherein  $N=3$ . *17*

1 19. An alternator for an automotive vehicle  
2 comprising:

3 ✓ a housing; *✓*  
4 ✓ a rotor rotatably disposed within said housing;  
5 ✓ a stator core disposed within said housing  
6 adjacent to said rotor, said stator core having slots;  
7 ✓ a set of windings disposed within said slots,  
8 said set of windings having  $2N+1$  phases where  $N$  is an  
9 integer greater than 1; and

10 ✓ a full wave rectifier circuit coupled to said  
11 set of windings, said rectifier circuit comprising at  
12 least  $2(2N+1)$  rectifying elements.

1 20. An alternator as recited in claim 19  
2 wherein said set of windings is coupled to a common node.

1 21. An alternator as recited in claim 19 *(P)*  
2 wherein said set of windings is coupled schematically in a  
3 polygon.